

Fig.1

Periodic Test-Object Orientation on the Microscope Stage.

1 - Microscope Frame(Field of View);

2 - Diffraction Grating Strips Images

The Line Scan Direction Indicates by the Arrow at the top of the Frame.

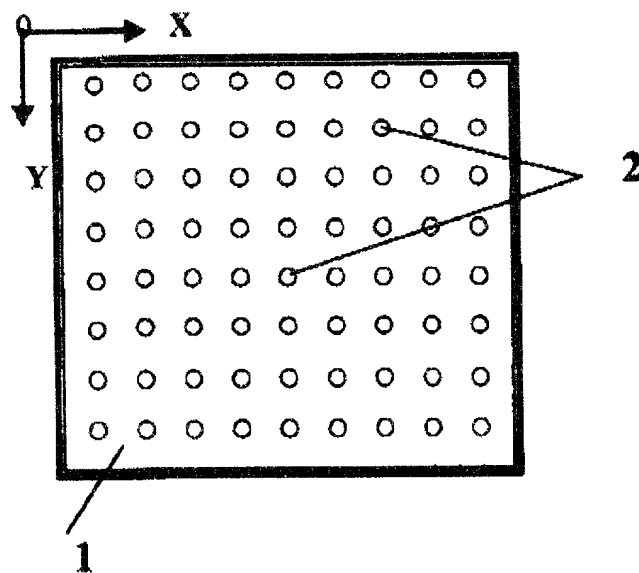


Fig.2

Two-Dimensional Array of Signal Values

- 1 – Microscope Field of View;
2 – Individual Signal Values Versus Coordinates X and Y.

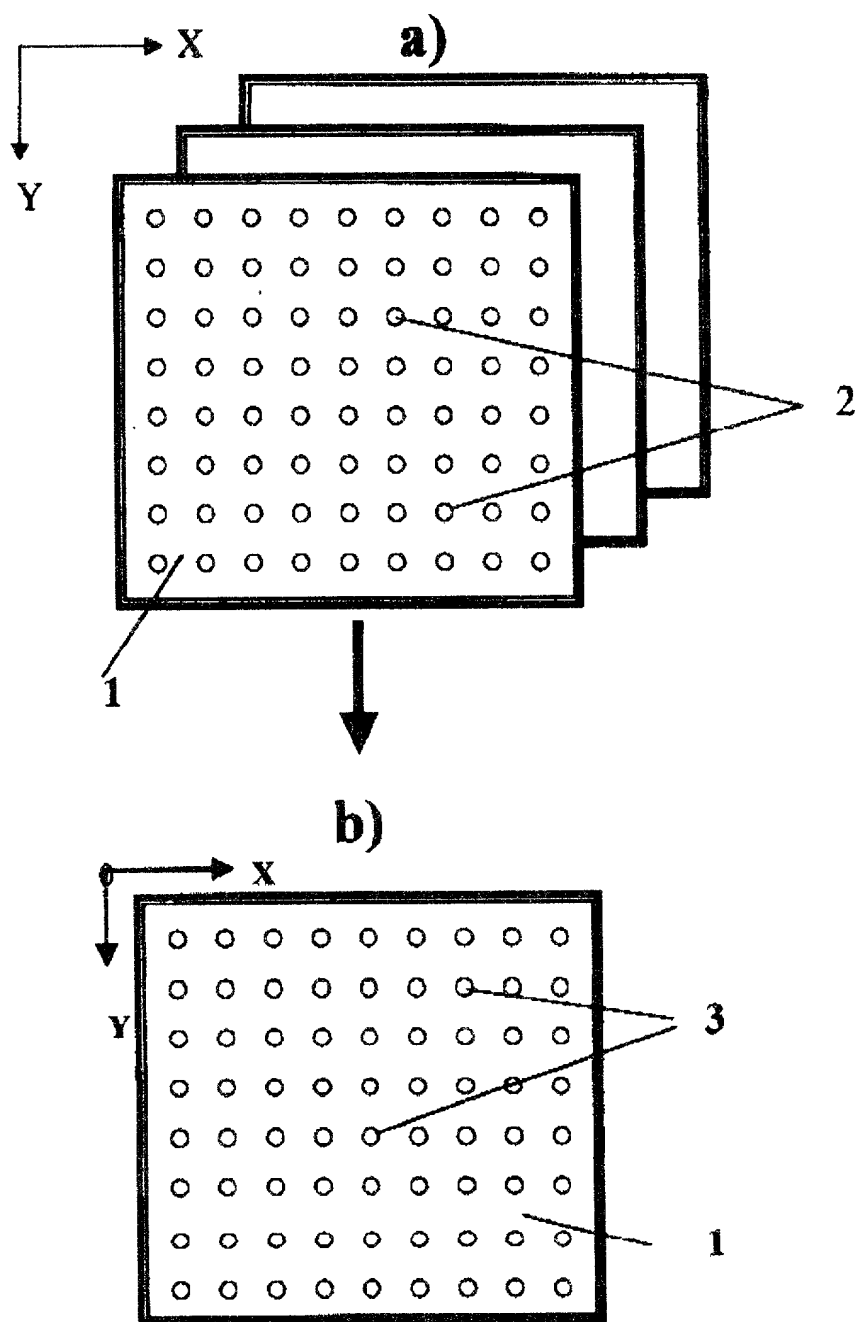


Fig.3
The Averaging of Arrays Procedure.

a) – Set of Initial Two-Dimensional Signal Arrays;
 b) – the Averaged Two-Dimensional Signal Array;
 1 – Microscope Field of view; 2 – the Signal Values in Initial Two-Dimensional Arrays; 3 – the Signal Values in the Averaged Two-Dimensional Array.

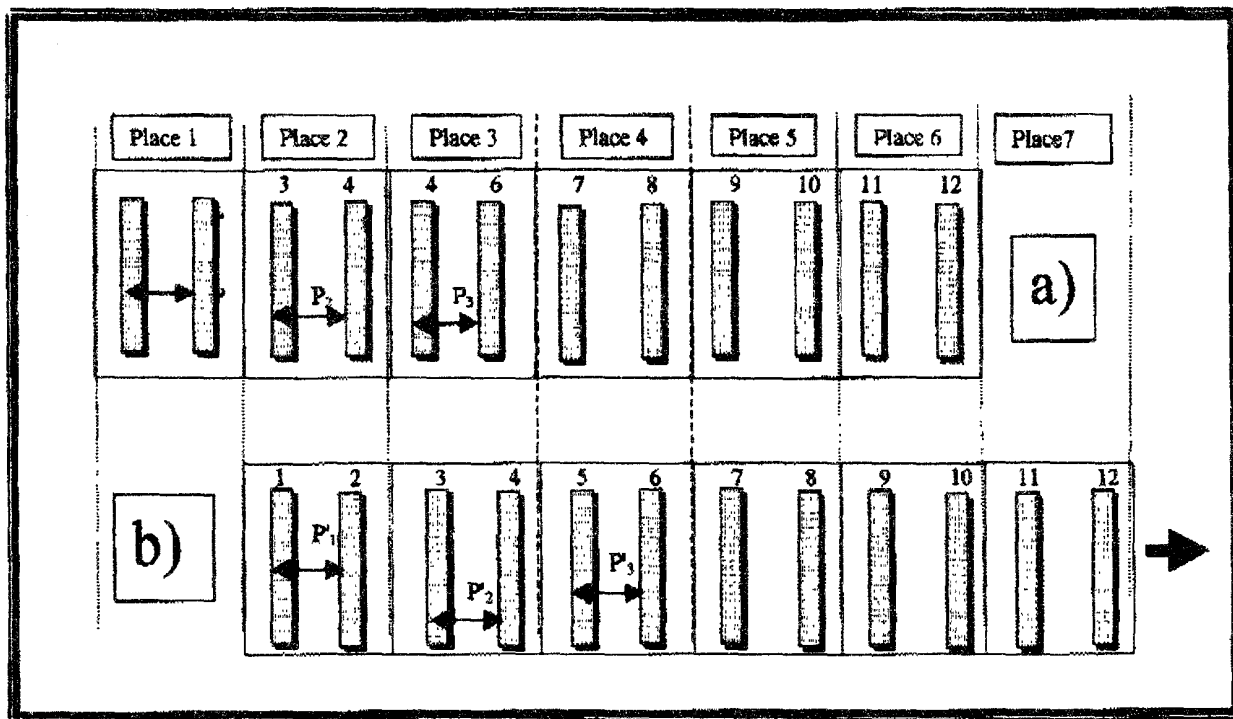


Fig.4

**Shift of the Diffraction Grating Image in the Microscope Field of View
According to Claim 1.a.**

Row a) is the Initial Grating Image; Row b) is the Image of Shifted Grating.
The Arrow at bottom right Indicates the Shift Direction.

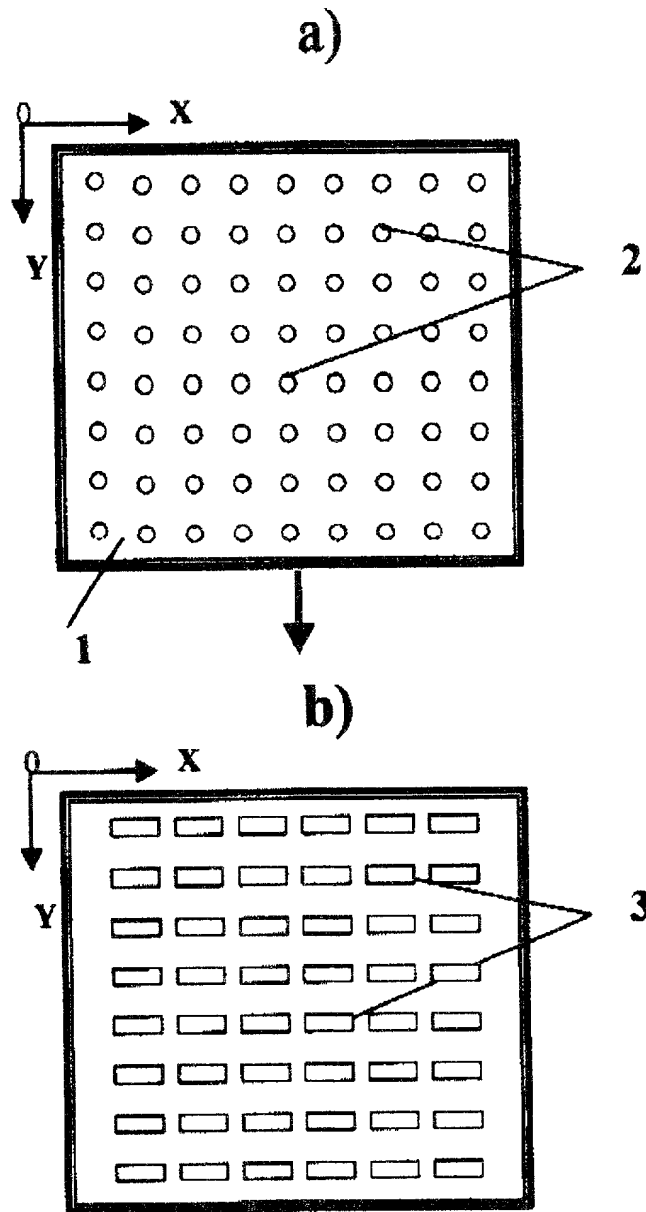


Fig.5

Transformation of Two-Dimensional Individual Signal Values Array (a)
into Two-Dimensional Individual Pitch Values Array (b).

2 - Individual Signal Values Versus Coordinate X and Y
3 - Individual Pitch Values Versus Coordinate X and Y

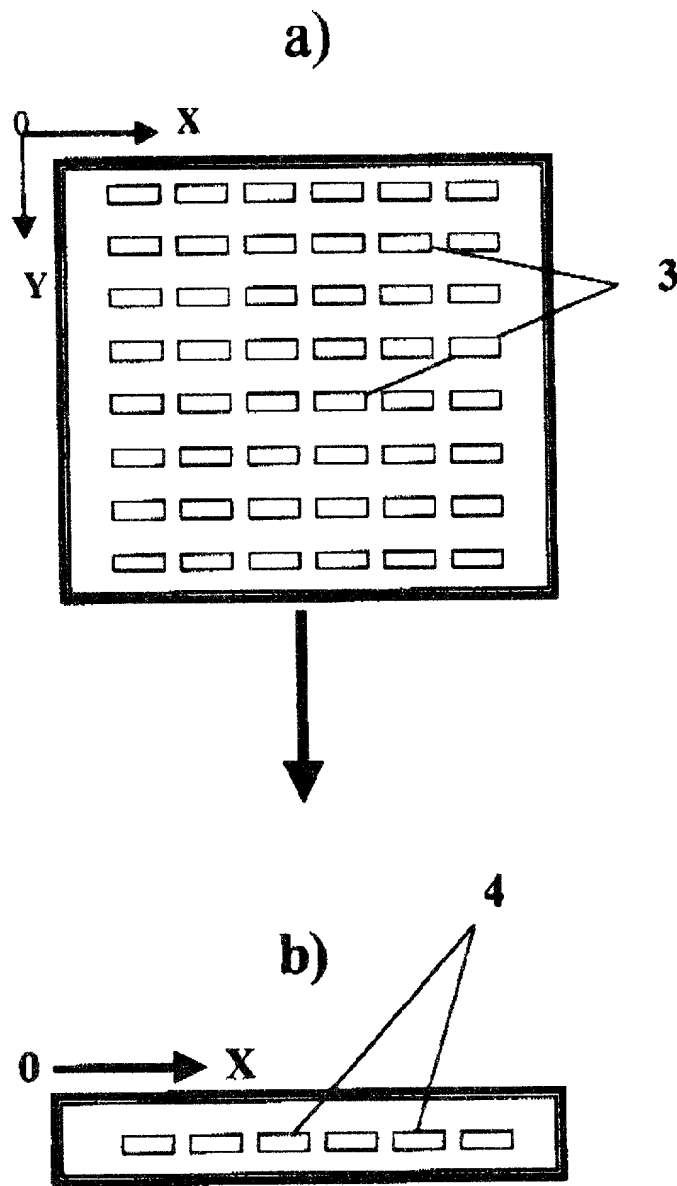


Fig.6

Transformation of the Two-Dimensional Individual Pitch Values Array (a) into One-Dimensional Mean Pitch Values Profile (b).

- 3 - Individual Pitch Values Versus Coordinate X and Y;
- 4 - Mean pitch Values versus X-Coordinate Created by Averaging of Individual Pitch Values along Y-Direction.

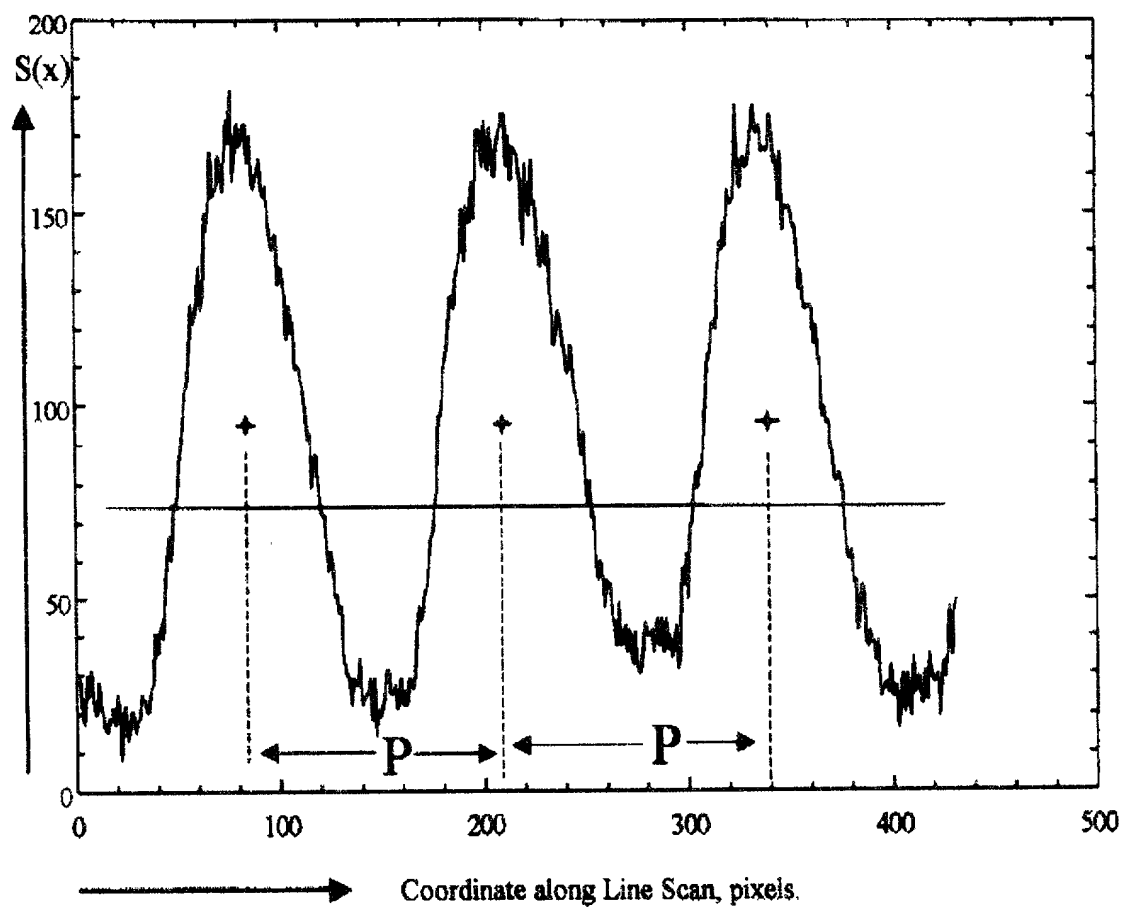


Fig.7

Signal cutting off by threshold

The sign + indicates the position of the Centres of mass of signal islands.

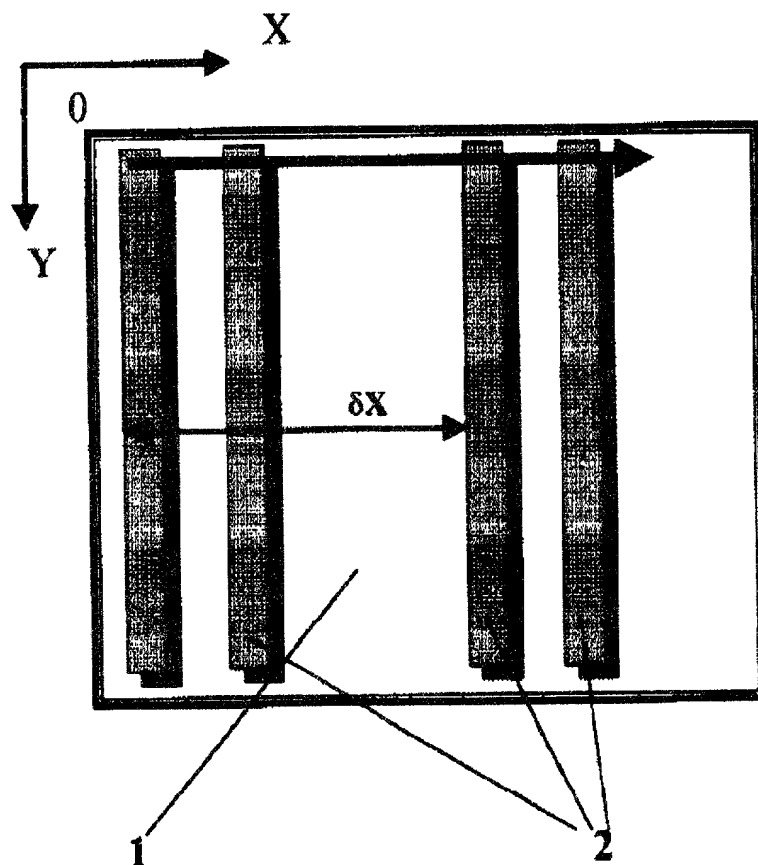


Fig.8

**Shift of the Strip Pair across Microscope Field of View
According to Claim 7.**

The Arrow at Top of Frame Indicates the Shift Direction; the Arrow
at the Frame Middle indicates the Shift Magnitude δX .

- 1 - Microscope Frame(Field of View);
- 2 - Test-Object Strips Images.

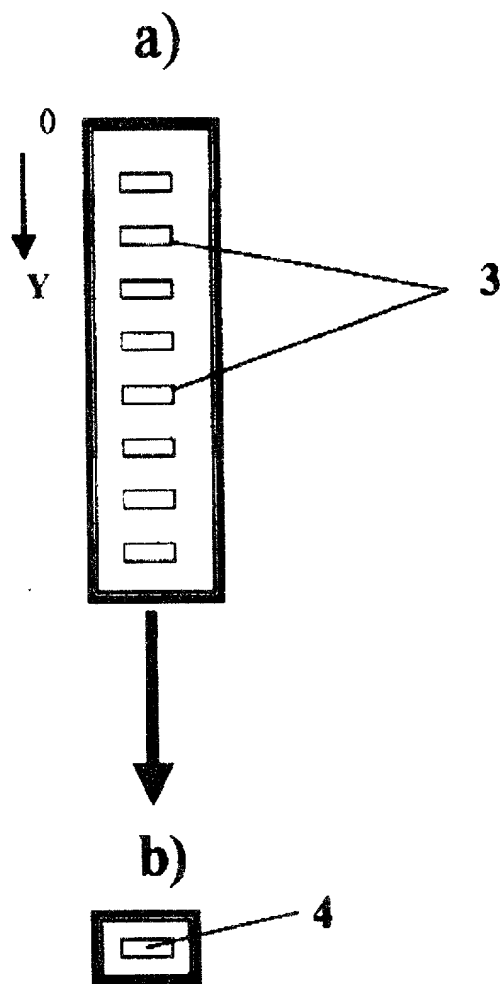


Fig.9

Transformation of the One-Dimensional Individual Pitch Values Array (a) into Mean Pitch Value (b) According to Claims 5r and 5s.

3 – Individual Pitch Values Versus Coordinate Y; 4 – Mean pitch Values Created by Averaging of Individual Pitch Values along Y-Direction.

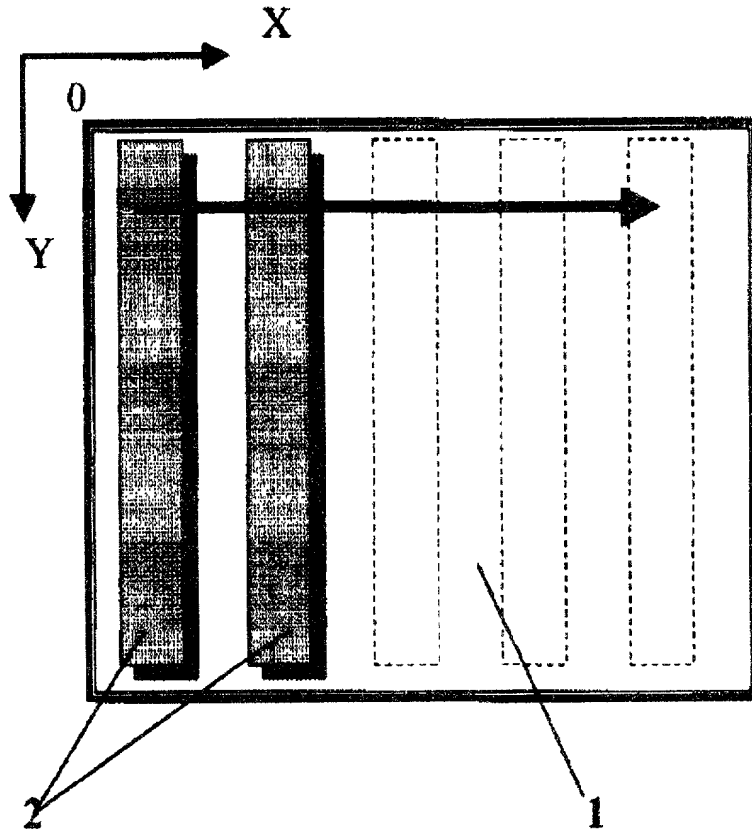


Fig.10

**Test-Object Geometry According Claim 5 and its
Orientation on the Microscope Stage.**

- 1 – Microscope Frame(Field of View);**
- 2 – Test-Object Strips Images.**

The Arrow at Top of the Frame Indicates Line Scan Direction.

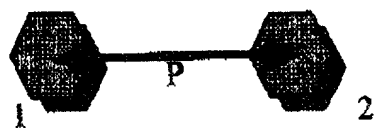


Fig.11

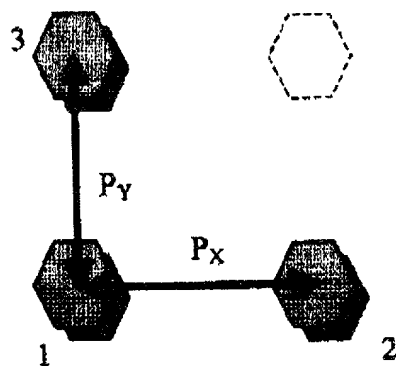
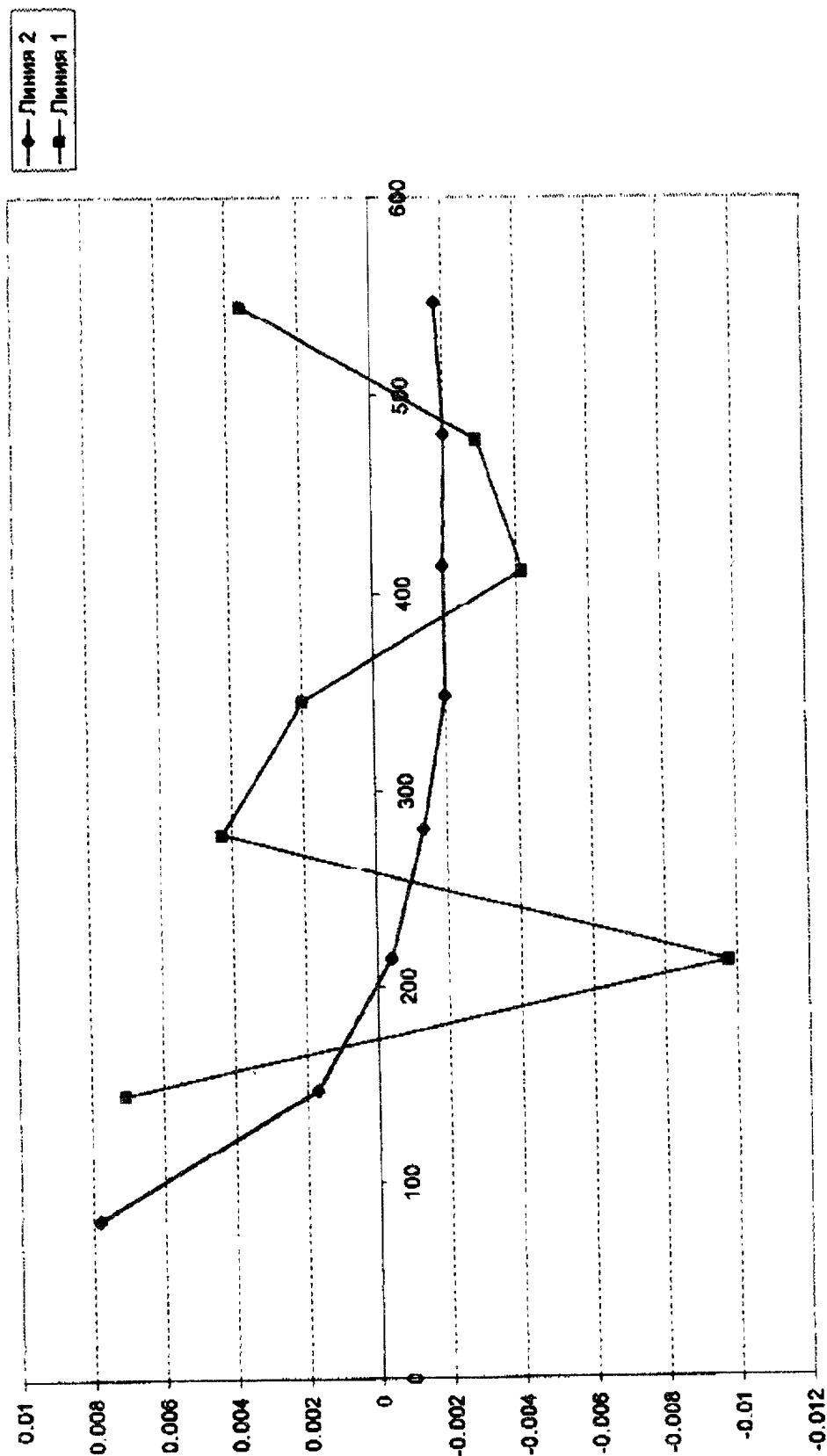


Fig. 12

Кажущаяся и истинная нелинейности микроскопа XL40-2



pixel

Fig. 13

Non Uniformity of NIST Sample

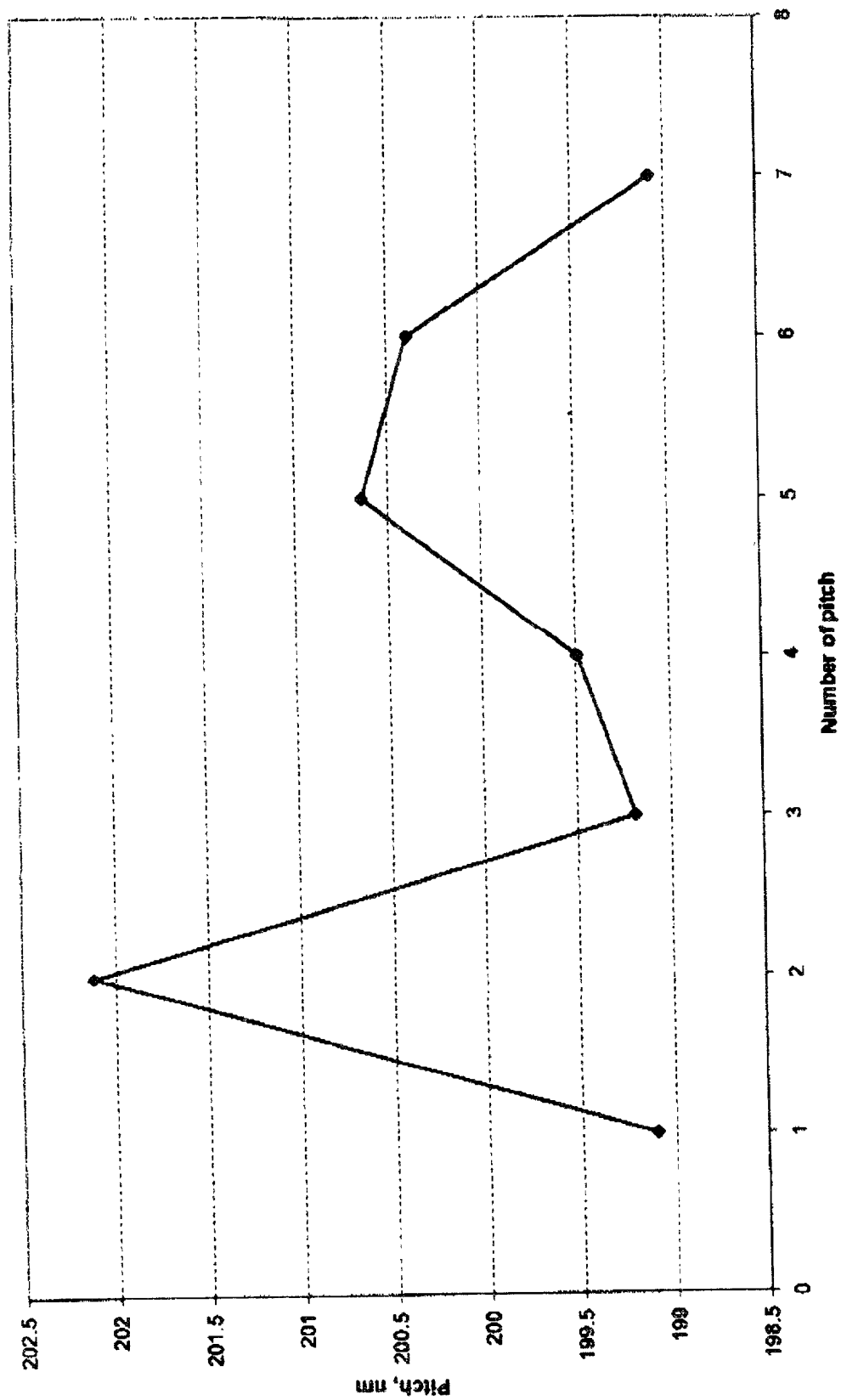


Fig. 14